

# Colour Memory

## I. Motivation

We created a simple card memory game using the android platform. The gameplay is like the children's game where users are given a set of facedown cards and they need to open them up 2 cards at a time trying to match them all. Our aim was to create a simple game with minimalistic UI/UX. We wanted it to have a simple and intuitive gameplay that any kid or kids-at-heart would enjoy playing it. In addition, we wanted to have animations that looks natural and fluid. And in the end, that is what we have delivered.

## II The Game

The game has 2 game modes – normal and time trial. The normal game mode follows the gamplay that was described earlier, where users are initially given 16 facedown cards which they can open 2 cards at a time. For each pair of cards opened, if both cards are of the same, the player would receive points and the card would stay faceup for the rest of the game. But if the cards are different or they do not match, the player would get a score deduction and both cards would then flip back down. When this happens, the player needs to remember what the cards were and at what position so that next time they would be able to find the correct match. As a bonus, we also added more points for each successive match the player makes. So potentially, the best score can be achieved if the player opens all the cards first, trying not to make any match, then when he knows where every cards are, pair them up in succession.

The other game mode is the time trial mode. The mechanics is pretty much the same as the normal mode except that in this mode the player is given a certain time limit to match all pairs of cards. If the player manages to pair up the cards before the time runs out, all the cards would shuffle and flipped back face down to give the player a chance to earn more points. Similar to the normal game mode, each successive match made in this game mode would also grant them more points. In addition to more points, the player is also given more time for each successive pairs made.

The game also has a theme shop where players can change the cards they're using when playing the game. Initially there are 2 themes that's unlocked. The rest of the themes can be unlocked by playing through the different game modes and achieving the requirements, which can be seen on the theme shop. The theme shop is not only for changing the cards (aesthetically). Changing the cards can also change the difficulty of the game. For example, if you have cards with colors in them, you'll have to keep in mind the different colors, as opposed to remember just the numbers which is easier for most people. Now imagine if the cards are just different shades of one color. It would definitely be harder to keep track of their placement. So effectively, the theme shop can also be used to change the difficulty of the game and not just simply to change the design.

## III Creation Process

Like what was said earlier, the game was developed using Android. We used Eclipse as an IDE which has a plugin for Android. Unlike Unity, Android doesn't have a lot of power when it comes to creating games. This means that most of the functions we needed were created from scratch.

One of the difficulties we encountered was the flipping animation when you select a card. <TODO:

**RAHUL can you fill this up since you are the one who knows this better?>**

Another difficulty we encountered was the big demand in design this game has. Since there's no place that we know of where we could grab the assets we needed, we had to create them on our own. This was especially challenging for us because none of us had much experience in creating assets. And as a solution, we searched the internet very often for help of different things like how to create a button, or how to have so and so effect.

Lastly, and probably the most difficult issue we've encountered was the support for different device sizes. Because we wanted it to look good for all the devices, we had to test it on every possible dimension and check if the design looks good. <**TODO: can you expound? XD**>

#### **IV The Verdict**

During the playtesting and the game showcase, we had a mix of different comments and suggestions from different people. First for the game difficulty, mostly players find the normal game mode easy or at most average. This as expected since they had all the time they needed to match the cards. When it came to the time trial game mode, we had split comments. Some of the players say that it is too hard and that it is impossible to finish while the others say that it is easy or quite average. Because of this, we decided to tweak the game a little. Since our target audience are kids, we decided to increase the time limit a little bit. From the game showcase, it seems that it was effective because a lot of people were able to get a high score in the game.

The next set of comments we got are for the card designs and the UX. Most of them said that the design are pretty good and that the animation was pretty smooth. This made us happy because we know that we were able to achieve our goal in that aspect. Some people on the other hand made some suggestions with regards to the high score page. Specifically, they asked why is it that we only rely on the “back” function of the android to get out from this page. Unfortunately, we didnt have enough time to add the functionality.

#### **V Acknowledgement**

The game code was done by both of us. It is hard to determine or to differentiate who did what specifically. As for the design, the first card theme, the one with different symbols in it, along with the design of the UX was done by Rahul. While Janssen created the 4 other card themes in the game.

Like what was said earlier, we used Eclipse as our IDE to help us code the game. The designs on the other hand was made using Adobe Photoshop and GIMP. The HKU Logo and the Digimon characters were grabbed from various websites with the help of google (all the copyright for them belongs to their respective creators).